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ABSTRACT

This document reports the preliminary results of the Fall, 1980 administration of the Cognitive Skills Assessment Battery (CSAB) to all first grade students in South Carolina. This battery was administered in accordance with the mandate of the 1978 Act 631 of the state legislature. The CSAB is an individually administered readiness battery requiring approximately 25 to 30 minutes per child for administration and which includes items related to the 18 kindergarten objectives of the State of South Carolina. Guidelines for interpreting the test data are provided and results of the 1979 and 1980 assessments are compared. Finally, district and state programs, resource materials and publications for meeting the needs of "not ready" students are indicated. (Author/RH)

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Cognitive Skills Assessment Battery (CSAB): Preliminary Results From Fall, 1980 Administration

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COGNITIVE SKILLS ASSESSMENT BATTERY (CSAB): PRELIMINARY RESULTS FROM FALL, 1980 ADMINISTRATION

Introduction

Section 1(b)(1) of 1978 Act 631 (Basic Skills Assessment Program) requires that a readiness test be administered to all public school students at the beginning of Grade 1. According to the legislation, the test is to be designed to measure a student's readiness to begin the formal school curriculum and the results of the test are to be used to provide appropriate developmental activities in the first grade. Additionally, the law requires that school districts shall advise the parents of any student not indicating readiness for first grade work to secure a complete physical examination for that child. The purpose of this report is to provide appropriate audiences with the results from the Fall, 1980 administration of the CSAB. Additional analyses will be conducted and reported at a later time.

The CSAB

The Boehm/Slater: Cognitive Skills Assessment Battery (CSAB), published by Teachers College Press, is an individually administered readiness battery requiring approximately twenty-five to thirty minutes per child for administration. However, the test is not timed and in the administration of the instrument teachers may use as much time as is necessary in order to obtain an accurate assessment of each child.

The CSAB was selected for use in the Basic Skills Assessment Program primarily because of its relationship to the eighteen kindergarten objectives. The instrument includes items related to the following areas: basic information

(e.g., address and birth date), identification of body parts, color identification, shape identification, number knowledge, information from pictures, picture comprehension, story comprehension, multiple directions, large muscle coordination, auditory memory, visual-motor coordination, sentence recall, vocabulary, visual memory, symbol discrimination, letter naming, visual-auditory discrimination, auditory discrimination, and response during assessment. The last area, "response during assessment", is based on the teacher's observations of how the child reacts during the test administration. This last area is not included in the determination of "readiness".

The Readiness Score

Section 1 (a) of Act 631 requires that the State Board of Education set minimum standards of skill mastery that each student is expected to attain in Kindergarten through Grade 12. Additionally, as mentioned earlier, school districts are required to provide appropriate developmental activities, as well as notification to parents, for those students not indicating readiness for first grade work.

As a consequence of the above requirements, it was necessary for the Department of Education and the State Board to identify a score below which a child would be considered as "not ready". The score which was selected was 88 of a possible 117 points (approximately 75%) on the CSAB.

The selection of the minimum score was based on data collected during the field-test of the CSAB during Spring, 1979. Prior to the administration of the test, teachers involved in the field-test were asked to rate each child in their class in terms of the child's degree of readiness for first grade work. The ratings used were "ready", "not ready", and "undecided". The "undecided" rating was used when teachers were unsure about the child's degree of readiness.

The teacher ratings obtained through this process were used in conjunction with students' actual performance on the test as a basis for selecting the test score which most clearly distinguished between the "ready" and "not ready" groups of students. However, the readiness classifications resulting from the selected score will not always be in agreement with teacher judgments. Some students considered ready by the teacher may be judged not ready by the test and vice-versa.

Cautions in Interpretation of the Data

There are two major cautions which appear to be in order concerning the interpretation of the test results. The first of these relates to the minimum score for the determination of readiness and the second to the differences in performance between and among various groups and subgroups.

As indicated in the preceding section, the legislation requires the establishment of a score for the determination of readiness. Although the procedures used in arriving at the score of 88 out of 117 points utilized a large amount of data and the best technical procedures available, it should be evident that there is little real difference in the cognitive development of two children who score 87 and 88 respectively, even though one will be considered "not ready" and the other "ready". The law requires that school districts provide appropriate developmental activities for those children who score below 88. Consequently, the State Department of Education continues to stress the necessity for meeting the needs of those children. At the same time, it is necessary to address the needs of all children regardless of their scores on the readiness instrument. This is of particular concern for those children who score very close to the minimum score but are still classified as "ready". For those children who score considerably above

or considerably below the "cut-score" differences in their cognitive development or "readiness" is usually apparent; however, for students who are at or near the "cut-score" very small differences in development may be exaggerated by the classifications of "ready" and "not ready".

Each child's performance on the test provides valuable information concerning his/her degree of readiness at the time of testing and should be used by teachers for the purpose of planning appropriate programs for each child. The scores should not, however, be viewed as unchanging or unchangeable and in no circumstances should the scores be used for the purpose of labeling or tracking children. Additionally, it is inappropriate to speak of performance on the test as "passing" or "failing". No first grader can possible "fail" at the beginning of the school year. The test results simply provide information to be used in meeting the needs of each child.

The second area in which extreme caution needs to be exercised in the interpretation of the data deals with the performance of various sub-groups within the total population of first graders. While data for various sub-groups can provide information as to which of the sub-groups as a whole may be most in need of additional developmental activities in the first grade, the data cannot and should not be used as a basis for making cause and effect statements. For example, in looking at the percentages of students classified as "ready" by "type of educational program experienced as a five-year old" (Table II) a large discrepancy is noted between public kindergartens and Head Start programs. These data do not support any conclusions about the relative effectiveness of the two programs. The programs serve different populations of students and there is no information available about differences

that may have existed between those populations at the time they entered the two programs. In other words, there is no information available about how much gain children made in either Head Start or public kindergarten and consquently no basis for making judgments about the relative effectiveness of the programs. Additionally, some differences in performance may be attributable to different emphasis in the programs. For example, Head Start provides a number of social services in addition to the education component.

Comparison of Results for 1979 and 1980

The following tables present the results of the preliminary analyses of the Fall, 1980 data. Comparable data are also provided for Fall, 1979.

Table I presents information about the numbers and percentages of students classified as "ready" or "not ready" for the total group (n = 47,697) and for each of the racial/ethnic classifications. (For ease of comparison the data for 1979 and 1980 are presented in adjacent columns.)

During Fall 1980, 63.7% of the total number of students tested were classified as "ready" based on the required minimum score of 88 of a possible 117 points. When compared with the Fall 1979 figure of 60.2% "ready", an increase of 3.5% between the first and second years of administration of the CSAB is noted.

Only two of the sub-populations (Black and White) represented involved numbers large enough to justify the assumption that the changes in percent ready between 1979 and 1980 represent more than chance variation. Although the performance of both groups (Black and White) improved between 1979 and 1980, the larger increase in the percentage "ready" (4.9%) was achieved by the Black students. Although the program is too new to make judgments about its effectiveness, the data are, nevertheless, encouraging and the changes are definitely in the desired direction.

TABLE 1

Number and Percentages of Students in Each of the Classifications "Ready", "Not Ready", and "Incomplete Data" by Racial/Ethnic Category and for the Total Group

Racial/Ethnic Category	Ready (Number) (Percent)		Not Ready (Number) (Percent)		Incomplete* (Number) (Percent)		Total (Number) (Percent)	
	1979	1980	1979	1980	1979	1980	1979	1980
American Indian	17 31.5	25 46.3	33 61.1	28 51.8	4 7.4	1 1.9	54 0.1	54 0.1
Asian American	171 65.0	183 67.3	79 30.0	71 26.1	13 5.0	18 6.6	263 0.5	272 0.6
Hispanic	63 64.3	53 53.0	30 30.6	41 41.0	5 5.1	6 6.0	98 0.2	100 0.2
Black	9,398 44.7	10,310 49.6	9,997 47.5	9,232 44.4	1,652 7.8	1,267 6.1	21,047 43.4	20,809 43.6
White	19,492 72.2	19,787 74.8	6,689 24.8	6,033 22.8	802 3.0	636 2.4	26,983 55.6	26,456 55.5
Unknown	47 58.8	4 66.6	23 28.7	1 16.7	10 12.5	1 16.7	80 0.2	6 0.0
TOTALS	29,188 60.2	30,362 63.7	16,851 34.7	15,406 32.3	2,486 5.1	1,929 4.0	48,525 100.0	47,697 100.0

*NOTE: Students were placed in the "Incomplete Data" category when two conditions occurred simultaneously: 1) responses for one or more test items were not recorded on the answer form and 2) the score obtained from the available data was less than 88. If condition #1 occurred but the obtained score was 88 or more, the student was classified as "Ready".

Returning now to the data for the total group tested, to what may we attribute the overall increase of 3.5 in the percentage of students classified as "ready"? Although the data presented here provide no definitive explanations for the increase, possible explanations may be sought from two sources: 1) information about changes in some of the variables, e.g. kindergarten vs. no kindergarten experience, which appear to be related to readiness and; 2) information about changes in the instructional emphasis in various early childhood programs.

In examining information from the first of these two sources, i.e. changes in variables which are apparently related to readiness, attention is drawn first to Table II which provides data on the percentage of students classified as "ready" by the type of educational program experienced as a five-year old.* Additionally, Table II indicates the percentage of the total population that participated in each type of program. For example, the 1979 data indicate that 7% of the students tested had not participated in any type of formal educational program as five-year olds. The comparable figure for 1980 is 5.0%. The decrease of 2% in the number of students in this category may account for some of the increase in overall performance since lack of participation in any type of formal educational experience as a five-year old appears to be related to the degree of readiness.

Before leaving Table II, it is perhaps worth noting that the 1980 data reflect some improvement in performance for students in all program types. The largest gain, 2.8% was made by students who had attended public kindergarten. If we assume that increases in the percentages of students ready are attributable to instruction, we would expect to find little or

*NOTE: Again, caution in interpretation of the data is urged. The data in Table II will not, absent other information, support statements concerning the differential effectiveness of various types of programs. Some apparent differences may be related to variables such as socio-economic status which is discussed on pages 10-12.

TABLE II

Number and Percentage of Students in Each of the Classifications "Ready", "Not Ready", and "Incomplete Data" by Type of Educational Program Experienced as a Five-Year Old and for the Total Group

Type of Program	Ready (Number) (Percent)		Not Ready (Number) (Percent)		Incomplete Data (Number) (Percent)		Total (Number) (Percent)	
	1979	1980	1979	1980	1979	1980	1979	1980
None	1,105 32.6	800 33.3	1,987 58.6	1,437 59.8	298 8.8	165 6.9	3,390 7.0	2,402 5.0
Public Kindergarten	22,358 61.9	24,235 64.7	12,041 33.3	11,742 31.4	1,748 4.8	1,461 3.9	36,147 74.7	37,438 78.5
Private or Non-Profit Kindergarten	3,584 79.2	3,768 81.3	820 18.1	775 16.7	121 2.7	93 2.0	4,525 9.3	4,636 9.7
Head Start	638 39.2	642 41.2	853 52.4	812 52.0	136 8.4	106 6.8	1,627 3.4	1,560 3.3
Other (Nursery Schools, etc.)	499 61.8	333 63.7	275 34.1	162 31.0	33 4.1	28 5.3	807 1.7	523 1.1
Unknown	930 48.7	576 51.1	838 43.9	477 42.3	141 7.4	74 6.6	1,909 3.9	1,127 2.4
TOTALS	29,114 60.2	30,354 63.7	16,815 34.7	15,405 32.3	2,477 5.1	1927 4.0	48,406* 100.0	47,686* 100.0

*NOTE: "Total" differs from total in Table I because the data for some students were not recorded on the response forms.

no change in the performance of un-instructed students. This is apparently the case since students who did not participate in pre-first grade programs exhibited an increase of less than 1%. This may easily be a function of chance variation or variation in the population of students between 1979 and 1980.

As mentioned earlier, information concerning changes in instructional emphasis in kindergarten programs might serve to explain some of the increase in the percentage of students identified as "ready". This seems especially likely if early-childhood educators are placing increased emphasis on the State adopted kindergarten objectives which are measured by the CSAB. While there is no "hard data" to demonstrate that this has happened in all early-childhood programs throughout the State, there is evidence to suggest that considerable effort is being made in this direction. School observations by staff of the Department of Education and conversations with school administrators and teachers both suggest that the kindergarten objectives are receiving more instructional emphasis in the public schools. Additionally, we understand that Head Start officials have reviewed the kindergarten objectives in an effort to ensure that they are incorporated in the instructional component of their programs.

In considering the kindergarten objectives, however, it should be noted that they were not adopted until Spring 1979 and were not available to teachers until the 1979-80 school year. Consequently, in those instances in which the objectives were not already a part of the early-childhood programs, teachers had only one year in which to incorporate them in their instruction prior to the Fall 1980 administration of the CSAB.

Table III presents data for several sub-populations of students, female and male; first grade repeaters and non-repeaters; handicapped and non-handicapped; and those who were eligible for participation in the free or reduced-price lunch program. Although no discussion will be provided concerning all of these sub-populations, special mention is warranted for two of them. First, the data for handicapped students do not reflect the total population of handicapped in the first grade. Handicapped students were included in the assessment program unless their Individual Education Plan (IEP) as required by Public Law 94-142 indicated that this type of testing would be inappropriate for the child. Under this policy a number of handicapped students were no doubt excluded, on a case-by-case basis, as a function of their special needs.

The second group represented in Table III and deserving special comment is the free-reduced price lunch sub-population. Data on this variable were collected as an indicator of the socio-economic background of the students since most studies involving performance on any type of cognitive test show a rather strong correlation between socio-economic status and test performance. Note that the term used is "correlation", not "cause-effect relationship". In general, socio-economic background seems to give rise to, or be a function of, conditions which affect student performance on tests of cognitive development. This seems to be the case with performance on the CSAB when students are identified as "ready" or "not ready" since the data for both 1979 and 1980 indicate that the weakest performance is exhibited by those students who were eligible for free lunch. Although socio-economic status cannot, in the short-term, be much affected by the public schools, there is ample research

TABLE III

Number and Percentage of Students in Each of the Classifications "Ready", "Not Ready", and "Incomplete Data" by Sex, First Grade Repeater or Non-Repeater, Handicapped or Non-Handicapped, and Eligibility for Free/Reduced-Price Lunch Program

Group	Ready (Number) (Percent)		Not Ready (Number) (Percent)		Incomplete Data (Number) (Percent)		Total* (Number) (Percent)	
	1979	1980	1979	1980	1979	1980	1979	1980
Female	14,876 64.3	15,509 68.1	7,168 31.0	6,520 28.6	1,098 4.7	760 3.3	23,142 47.7	22,789 47.8
Male	14,286 56.4	14,850 59.6	9,672 38.1	8,886 35.7	1,382 5.5	1,169 4.7	25,340 52.2	24,905 52.2
Repeaters	2,807 56.7	3,234 63.4	1,865 37.7	1,661 32.6	279 5.6	205 4.0	4,951 10.2	5,100 10.7
Non-Repeaters	26,279 60.5	27,123 63.7	14,956 34.4	13,739 32.3	2,195 5.1	1,723 4.0	43,430 89.8	42,585 89.3
Handicapped	614 37.7	576 41.9	876 53.8	721 52.4	139 8.5	78 5.7	1,629 3.4	1,375 2.9
Non-Handicapped	28,485 60.9	29,777 64.3	15,947 34.1	14,680 31.7	2,336 5.0	1,850 4.0	46,768 96.6	46,307 97.1
Not Eligible for Free/ Reduced Price Lunch	15,564 76.1	17,228 78.8	4,373 21.4	4,191 19.2	510 2.5	448 2.0	20,447 42.3	21,867 45.9
Eligible for Reduced Price Lunch	2,085 61.8	2,701 67.1	1,122 33.2	1,190 29.5	169 5.0	137 29.5	3,376 7.0	4,028 8.4
Eligible for Free Lunch	7,607 42.6	10,405 47.8	8,798 49.2	10,012 46.0	1,461 8.2	1,343 6.2	17,866 36.9	21,760 45.7

*NOTE: Number and percentage for subgroups may differ from state totals due to incomplete data for some students, e.g. information on eligibility for free/reduced-price lunch programs was not available for 6,836 students in 1979.

evidence to suggest that educational deficiencies exhibited by children from economically and socially deprived backgrounds can, in large measure, be overcome through the provision of special instruction.

The data related to socio-economic status provide an additional reason for using caution in the interpretation of the data presented earlier in Table II. For example, in looking at the difference in the percentages of "ready" students between public kindergarten and Head Start programs, it is necessary to keep in mind the fact that eligibility for participation in Head Start programs is generally based on economic and/or social deprivation. Being aware of the differences in the populations of students served, it is obvious that making judgments about program effectiveness solely on the basis of the percentage of students classified as "ready" is simply not warranted. This caveat about interpretation of the data is applicable to any comparisons when the populations involved differ significantly on some important characteristic.

A final comment on Table III. In some instances there is apparently a substantial change between 1979 and 1980 in the percent of the total population that falls into a particular sub-category. For example, the students eligible for free lunch appears to have increased by 8.8 percentage points over the one-year period. This probably is due largely to improved data collection rather than to any significant change in the population, since in 1979 the data concerning eligibility for free/reduced price lunch was not available for 6,836 students, whereas, in 1980 that number was reduced to 42.

Table IV contains descriptive statistics that will be useful to the reader who is interested in the shape of the score distributions for various

TABLE IV

Means, Medians, Modes, Standard Deviations, and Minimum and Maximum Score by Racial/Ethnic Category and for Total Group

Racial/Ethnic Category	Mean		Median		Mode		Standard Deviation		Minimum Obtained Score		Maximum Obtained Score	
	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980
American Indian	80.0	83.6	81	86.5	Multi Modal	99	14.8	19.1	37	20	102	111
Asian American	90.1	89.2	93	94	Multi Modal	97	16.5	20.2	0	0	114	114
Hispanic	89.9	86.2	91	91.5	Multi Modal	99	13.5	20.4	35	0	115	112
Black	83.8	85.2	86	87	88	91	14.9	14.7	5	5	117	117
White	92.9	93.7	95	96	98	97	12.5	12.2	0	0	117	117
Unknown	86.3	88.3	90	93.5	91	96	16.3	11.2	37	69	113	97
TOTALS	88.9	89.9	91	92.0	95	97	14.3	14.0	0	0	117	117

sub-groups and the total population. The statistics require no comment except to point out that both the mean and median scores for the total group of students increased by 1 point between 1979 and 1980.

In general, discussions of students who are identified as "ready" or "not ready" tends to result in a mind-set that regards all students in each of the categories as being the same. Consequently, we frequently forget that there are degrees of readiness and that readiness should be thought of as a continuum of development. The data presented in Table V should vividly illustrate the point that all students identified as "not ready" are not the same and consequently, do not all need the same kind or degree of special attention. There is undoubtedly a tremendous difference in the developmental levels of two students who score 17 and 87 respectively, but both students would be identified as "not ready".

In examining the data in Table V, the reader will note that 7,096 students, approximately 14.9% of those tested scored in the interval 81-87 -- just below the readiness score of 88. Another 5,859 (12.3%) scored in the interval 71-80. Obviously, the time and effort required to meet the needs of the students in the score range of 71-87 will not be as great as that required to meet the needs of the 3.8% who scored 50 or below.

So What?

Frequently during the past year the question, "So what?", has been raised. "So what is happening as a result of the testing?" "So what is being done to meet the needs of students who are not ready?" There have been many variations on the question and the responses have been equally varied.

TABLE V

Grouped CSAB Rawscore Frequency Distribution
All Students
Fall, 1980

Score Interval	Frequency	Cumulative Frequency	Percent	Cumulative Percent
0-10	14	14	.029	.029
11-20	21	35	.044	.073
21-30	64	99	.135	.208
31-40	171	270	.358	.566
41-50	449	719	.941	1.507
51-60	1,094	1,813	2.294	3.801
61-70	2,567	4,380	5.382	9.183
71-80	5,859	10,239	12.284	21.467
81-87*	7,096	17,335	14.877	36.344
88-90	4,051	21,386	8.493	44.837
91-100	15,198	36,584	31.864	76.701
101-110	9,936	46,520	20.831	97.532
111-117	1,177	47,697	2.468	100.0

*The use of unequal intervals at this point is for the purpose of separating the "ready" and "not ready" groups based on the score of 88 of a possible 117 points.

Some districts have expended local funds to employ aides for first grade teachers in order to provide the teachers more time to work with students who need extra assistance. Other districts have initiated programs involving the parents of "not ready" students in activities designed to teach the parents how to help their children at home. Some districts have initiated summer programs to meet the needs of students who, at the end of kindergarten, seemed to be "not ready" for first grade. Still others have provided additional materials for first-grade teachers to use in working with the "not ready" group. Additionally, some school districts have made changes that incorporate two or more of the approaches just mentioned.

The Department of Education has done several things to assist district personnel in meeting the needs of "not ready" students -- in-service education for district personnel; the development of resource materials for use by teachers; and the field-testing of instructional programs designed to meet the needs of "not ready" students are among those activities carried out or in progress.

Resource materials and publications currently available include the following:

Let's Get Started: First Grade Readiness Activities

This is a video-cassette tape of a first grade teacher's classroom management techniques that insures appropriate attention to student deficiencies. The tape also includes segments showing students engaged in developmental activities, each of which addresses a specifically identified readiness skill.

Learning Through Play: A Guide for Parents of 3-, 4-, or 5-Year Olds, South Carolina Department of Education, 1980.

This publication contains developmental activities keyed to the 18 State Kindergarten Objectives. The activities were designed specifically for the parents

of 3-, 4-, or 5-year olds and can easily be done at home.

> The Rainbow Book for First Grade, Curriculum Development Section, Office of General Education, South Carolina Department of Education, 1980.

This publication contains developmental activities based on the 18 State Kindergarten Objectives. The activities were written specifically for first grade teachers to use with first graders in bringing them into the formal curriculum as learning and maturity dictate.

> Ready or Not: A Report on the 1979 Statewide Readiness Test Administration and Results, Educational Assessment Section, Office of Research, South Carolina Department of Education, September, 1980

This publication presents the interpretive information along with the first year results of the 1979 Statewide Readiness Test Administration. Information on instructional implications and local reactions to the first year administration are also included.

Six school districts are currently participating in the field-testing of three instructional programs intended to meet the developmental needs of "not ready" students. The programs are funded through the Department with federal funds and an evaluation of the program is being conducted.

This enumeration of what school districts and the Department of Education have done in response to the needs of "not ready" students is not intended to be exhaustive, instead the intent is to illustrate that the BSAP is being taken seriously and districts, with assistance from the Department of Education, are attempting to use the CSAB results to meet the needs of students.

Additional information related to the "So What?" question can be found in, "Findings and Recommendations Related to the Kindergarten Objectives and First Grade Readiness Testing", a report based on visits to 20 school districts in which 50 percent or more of the first graders were "not ready" during Fall, 1979. (The report is available from the State Department of Education, Office of General Education.)

Conclusion

As indicated in the beginning of this report, the results that are presented here are derived from preliminary analyses of the Fall, 1980 CSAB data. Additional analyses will be conducted and reported at a later time. The reader who desires a more definitive discussion of the instructional implications of the CSAB data is referred to Ready or Not, a report which was referenced earlier and which is available from the State Department of Education, Office of Research.